

Table 4-5: Comparison of Measured Sound Levels (L_{max}) of 4-Stroke and 2-Stroke Snowmobile Pass-Bys at 50 feet - Denali		
Target Speed (mph)	4-Stroke Arctic Cat	2-Stroke SkiDoo Skandic
	Avg L_{max}	Avg L_{max}
Idle	31.3	50.8
10	55.4	62.2
20	58.5	71.1
30	63.4	72.7
Max Throttle	66.6	75.9

Source: NPS unpublished data, courtesy of Shan Burson

audibility as much as rolling topography. In one direction the snowmobile was audible at 3.4 miles through several bands of spruce forest and multiple intervening ravines (Burson, unpublished NPS data).

Other Human Generated Noise

Other visitor activities in the backcountry, such as hiking, camping, skiing, and dog mushing do have a measurable impact on the natural soundscapes of the park and preserve. Sound monitoring stations located near centers of camping activity at the Ruth Amphitheater and Kahiltna Base Camp landing areas recorded human voices, cookstoves, and other camping sounds throughout the day and late into the night. However, the impacts from these were very localized as demonstrated by the near absence of these noises at sound monitoring stations at sites remote from roads or landing areas – such as the Dunkle Hills and Tokositna (Burson, unpublished NPS data). Transportation into the backcountry is an exception to this general conclusion, since many parts of the park additions and preserve are most easily accessed by air taxi, which has all the noise impacts described above for airplanes.

The area affected by a noise source is difficult to determine because it is dependent on a great variety of factors, including terrain, vegetation cover, temperature, and the presence of wind or other weather conditions. A rough hierarchy may be established to characterize the potential distance over which a particular noise travels. It is as follows:

Maximum Distance Noise Travels from Source	Characterization	Examples
Generally less than ¼ mile	Localized	People talking, campsite activity, backpacking stoves, hiking, skiing
Generally in the range of ¼ mile to 4 miles	Mid-range	Snowmobiles, motorboats, park road traffic, chainsaws
Generally greater than 4 miles	Long-range	Propeller planes, jets, helicopters, trains

This categorization is not intended to be absolute, but to provide a relative indicator of the distance noise travels, and thus the area affected. This characterization will not always hold; for example, on a calm, cool day in an area with only tundra vegetation the noise of a motorboat may be heard more than 4 miles away. However, an upwind listener along a loud river in thick forest on a day when there is a strong wind might not hear a motorboat until it turns a bend ¼ mile downstream. Generally, however, the noise would be heard somewhere in the range of ½ mile to 4 miles from the source.